

DESCRIPTION

The Fail-Safe CFE-4 Series Clean Room Troffer is enclosed and gasketed to maintain ceiling integrity and protect against infiltration of particles and airborne bacteria. The housing and door are designed to work with 2" inverted "T" ceiling grids. Sealed housing and door frame allow relamping without contamination of the clean areas. These luminaires are U.L. listed and C.S.A. certified for wet locations and are manufactured in accordance to USDA, FDA, NSF and Federal Standard 209E guidelines. 200 PSI Hose Down Rating standard.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Application

The CFE-4 luminaires are ideal for I.E.S. Class 1,000, 10,000 and 100,000 clean room environments. Applications include clean rooms, technical and biomedical labs, and food processing/testing centers.

A ... Construction

Nominal 4-3/4" deep recessed, one-piece housing made of 20-gauge cold rolled steel; die-formed and seam-welded to create a sealed chamber. Gasketed wiring access cover.

B ... Electrical

Standard Class P, CBM/ETL ballast.

C ... Finish

Electrostatically applied baked white polyester powder enamel finish. Minimum reflectance 90%. Multistage cleaning cycle, iron phosphate coating with rust inhibitor. Conveyorized application and curing time accurately controlled at an elevated temperature.

D ... Frame/Shielding

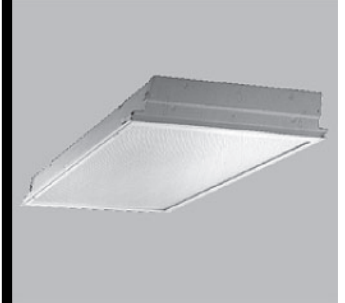
Flush-mounted extruded aluminum door frame with mitered corners and baked white enamel finish. Flexi-seal closed-cell foam gasketing is used between lens frame and housing.

Frame/Shielding Cont.

One-piece extruded lens gasket provides a dependable seal between the lens and lens frame. Lens is clear extruded with prisms positioned inside fixture and smooth surface on outside for easy cleaning. Other shielding options include prismatic polycarbonate.

E ... Hinging/Latching

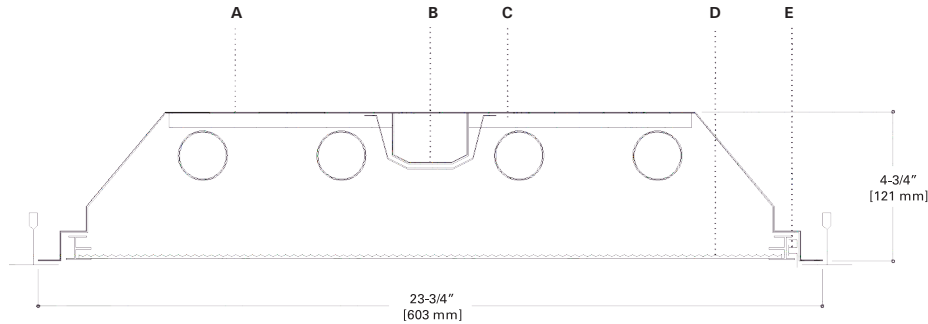
Two slide-latches with safety screws secure lens frame in the closed position. Lens frame hinges and is removable without the use of tools.



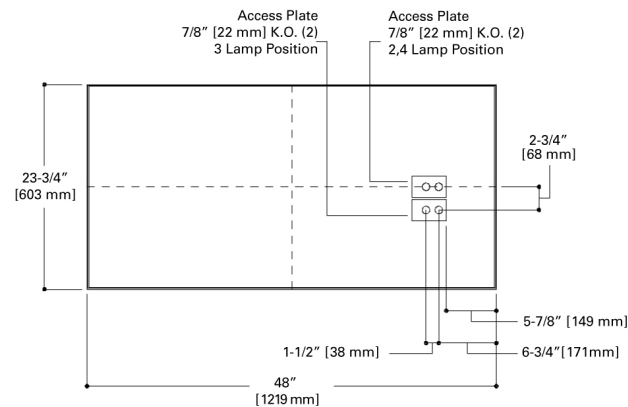
CFE-4

64W - 160W

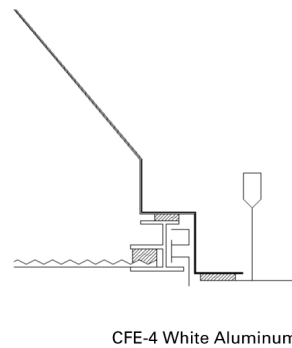
2' x 4' FLUORESCENT
RECESSED STATIC
Clean Room Troffer
2" Grid



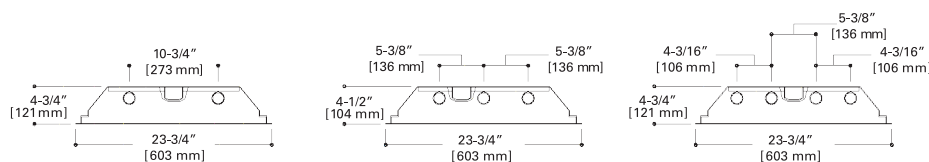
MOUNTING DATA



DOOR FRAME



LAMP CONFIGURATIONS



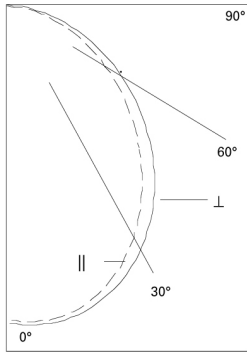
ENERGY DATA

Input Watts:
ES Ballasts & ES Lamps
 240 (72 Watts)
 340 (114 Watts)
 440 (140 Watts)
ES Ballast & STD Lamps
 240 (82 Watts)
 340 (130 Watts)
 440 (160 Watts)
 232 (71 Watts)
 332 (108 Watts)
 432 (142 Watts)

Electronic Ballast

Consult Factory

PHOTOMETRICS



Coefficients of Utilization

rc	Effective floor cavity reflectance 20%																	
	80%			70%			50%			30%			10%			0%		
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	86	86	86	86	84	84	84	84	81	81	81	77	77	77	74	74	74	73
1	80	76	73	71	78	75	72	70	72	69	67	69	67	65	66	65	63	62
2	73	67	62	59	71	66	61	58	63	60	57	61	58	55	59	56	54	52
3	67	59	54	49	65	58	53	49	56	52	48	54	50	47	52	49	46	45
4	61	53	47	42	60	52	46	42	50	45	41	48	44	41	47	43	40	39
5	56	47	40	36	54	46	40	35	44	39	35	43	38	35	42	38	34	33
6	51	42	35	31	50	41	35	31	40	34	30	39	34	30	38	33	30	28
7	47	38	31	27	46	37	31	27	36	30	27	35	30	26	34	29	26	25
8	44	34	28	23	43	33	27	23	32	27	23	31	26	23	31	26	23	21
9	40	30	24	20	39	30	24	20	29	24	20	28	23	20	27	23	20	18
10	37	28	22	18	36	27	22	18	26	21	18	26	21	18	25	21	17	16

Candlepower

Angle	Along II	45°	Across I
0	2331	2331	2331
5	2315	2317	2316
10	2265	2275	2287
15	2174	2201	2230
20	2055	2102	2147
25	1917	1986	2048
30	1771	1864	1936
35	1624	1740	1816
40	1475	1610	1684
45	1323	1472	1545
50	1169	1324	1394
55	1013	1162	1234
60	853	991	1057
65	688	803	867
70	520	609	669
75	353	415	467
80	202	232	276
85	76	89	113
90	8	10	15

CFE-4-332-120-IK12-EB81
Electronic Ballast

(3) F32T8 Lamps
2900 Lumens each

Efficiency 72.6%

Plane: 0° 90°
Spacing Criteria: 1.1 1.2

Report # 01711

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0- 30	1757	20.2	27.8
0- 40	2841	32.7	45.0
0- 60	4985	57.3	78.9
0- 90	6316	72.6	100.0
0-180	6316	72.6	100.0

Typical VCP Percentages

Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	55	62	51	57
30 x 30	50	53	46	49
60 x 30	53	55	51	53
60 x 60	49	49	45	45

ORDERING INFORMATION

SAMPLE NUMBER: CFE-4-340-120-IK12-LE3

Product Family	Grid Size	Lamp Type	Voltage	Shielding	Ballast	Options
CFE	4					
CFE=Fluorescent Efficiency	4=2"	T8 Fluorescents 232=(2) 32W Lamps 332=(3) 32W Lamps 417=(4) 17W Lamps 432=(4) 32W Lamps T12 Fluorescents 240=(2) 40W Lamps 340=(3) 40W Lamps 420=(4) 20W Lamps 440=(4) 40W Lamps U-Lamps 2U6=(2) 40W Lamps 2U6T8=(2) 32W Lamps	120=120V 277=277V 347=347V	IK12 =K-12 Prismatic Acrylic (prisms up) IP12 =K-12 Prismatic Polycarbonate (prisms up) 93 =Prismatic Tempered Glass	Leave blank for magnetic (20 watt only) LE3 =Energy Saving Ballast Electronic Ballasts¹ EB81 =(1) Ballast for use with T8 Lamp EB82 =(2) Ballasts for use with T8 Lamp EB21 =(1) Ballast for use with T12 Lamp EB22 =(2) Ballasts for use with T12 Lamp	EBP =Emergency Battery Pack GLR =Fuse and Holder RIF =Radio Frequency Interference Filter

Notes:
 For additional options, consult your Cooper Lighting Representative. Specifications and Dimensions subject to change without notice.
 Electronic ballast may cause interference with other electronic devices. If interference occurs, move the device away from the product or plug/connect into a different circuit/outlet.
¹ For specific electronic ballast, specify brand and catalog number.